UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
**United States Patent and Trademark Office**
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/870,402 | 05/30/2001 | Kevin Morton | NEOMTRX.004A | 7475 |

20995 7590 06/16/2003

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

| EXAMINER | |
|---|---|
| DAVIS, RUTH A | |
| **ART UNIT** | **PAPER NUMBER** |
| 1651 | |

DATE MAILED: 06/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/870,402 | MORTON, KEVIN | |
| | Examiner | Art Unit | |
| | Ruth A. Davis | 1651 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-33 and 35-61* is/are pending in the application.

4a) Of the above claim(s) *1-32 and 36-39* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33,35,40-61* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *13* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

## DETAILED ACTION

Applicant's amendment filed March 25, 2003 has been received and entered into the case. Claim 34 is cancelled; claims 41 – 61 are added; claims 1 – 33, 35 – 61 are pending. Claims 1 – 32 and 36 – 39 are withdrawn from consideration; claims 33, 35 and 40 – 61 have been considered on the merits. All arguments have been fully considered.

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 33, 35 and 40 – 61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 33 and its dependents are rendered vague and indefinite because the method appears to recite steps for collecting breast ductal fluid, not for screening for breast cancer. There are no positive recitation of steps drawn to screening for breast cancer, other than screening for a breast cancer marker. Moreover, it is unclear how one would screen for cancer by screening for breast cancer.

Claim 46 is rendered indefinite because it is unclear if the method further comprises a sample collector, or it the device further comprises a sample collector.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 33, 35, 40 – 42, 53 – 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hung (US 6413228) in view of Hung et al. (US 2002/0007115) and/or Nguyen (US 2002/0086341).

Applicant claims a method for screening breast cancer in a patient, the method comprising providing a patient with at least one breast duct having an external opening, directing a stream of carrier fluid under pressure into the opening, directing a carrier fluid under pressure into the opening, removing the carrier fluid through the opening by applying compression, suction and heat to the breast, screening the removed fluid for at least one breast cancer marker. The screening step comprises screening for cytologically abnormal cells, the breast cancer marker is associated with at least one condition selected from tumorigenesis, tumor growth, neovascularization, and cancer invasion. The method further comprises manipulating the duct to enhance transport of carrier fluid, the compressive force is peristaltic, the fluid is introduced transductally or percutaneously, and the fluid comprises a component for enhancing marker transport. The removing step occurs immediately after carrier introduction, or alternatively after a sufficient indwelling period. The carrier comprises an aqueous solution,

and the breast marker is a metabolite, carcinoma cell, dysplastic cell, or is selected from a protein, peptide, glycoprotein, lipid, glycolipid or proteolipid.

Hung '228 teaches methods for collecting breast ductal fluid comprising cellular material and markers (disease markers) to identify breast precancer or cancer in patients (abstract). Hung '228 teaches the method wherein a wash fluid (carrier fluid) is introduced into the breast duct for 1 second to 1 hour, followed by removal via massage and aspiration (or suction) (col.11 line 45 – col.13 line 45). The cellular material is then cytologically screened for cell conditions and other disease markers such as proteins, peptides, lipids, glycoproteins metabolites (col.4), chromosomal abnormalities, carcinoma, atypical hyperplasias, and/or growth factors (col. 12 – 15). The carrier fluid may further contain components for enhancing fluid removal (col.12)

Hung '228 does not teach the method wherein heat is applied to the breast. However, Hung '7115 teaches methods of nipple aspiration wherein fluid yield is increased by applying compression, suction, and heat (0015). In addition, Nguyen teaches applying a warm compress to the breast to facilitate breast fluid removal (0023). At the time of the claimed invention, one of ordinary skill in the art would have been motivated by Hung '7115 and/or Nguyen to apply heat to the breast in the methods of Hung '228 with a reasonable expectation for successfully obtaining breast fluid for screening. Although Hung '228 does not teach each of the specific modes of compression or disease markers, it would have been well within the purview of one of ordinary skill in the art to optimize such markers and pressure techniques as a matter of routine experimentation.

6. Claims 33, 35, 40 – 42 and 53 – 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Love in view of Hung '7115 and Nguyen.

Applicant claims a method for screening breast cancer in a patient, the method comprising providing a patient with at least one breast duct having an external opening, directing a stream of carrier fluid under pressure into the opening, directing a carrier fluid under pressure into the opening, removing the carrier fluid through the opening by applying compression, suction and heat to the breast, screening the removed fluid for at least one breast cancer marker. The screening step comprises screening for cytologically abnormal cells, the breast cancer marker is associated with at least one condition selected from tumorigenesis, tumor growth, neovascularization, and cancer invasion. The method further comprises manipulating the duct to enhance transport of carrier fluid, the compressive force is peristaltic, the fluid is introduced transductally or percutaneously, and the fluid comprises a component for enhancing marker transport. The removing step occurs immediately after carrier introduction, or alternatively after a sufficient indwelling period. The carrier comprises an aqueous solution, and the breast marker is a metabolite, carcinoma cell, dysplastic cell, or is selected from a protein, peptide, glycoprotein, lipid, glycolipid or proteolipid.

Love teaches methods for obtaining cellular material from breast ducts (abstract) for screening, diagnosing and monitoring disease states, cancer and pre cancerous conditions (col.3 line 5-20). Specifically, the method comprises introducing a wash fluid (carrier fluid) into a breast ductal orifice (external opening) for 1 – 5 minutes, collecting (removing) the fluid and screening the material for proteins, carbohydrates (lipids, peptides) cellular markers,

morphological, histochemical and/or immunohistochemical abnormalities to determine the presence of cancer or pre-cancerous conditions (physiological conditions) (col.3-4).

Love does not teach the method wherein heat and suction is applied to the breast, or wherein additional components are added to enhance fluid transport. However, Hung '7115 teaches methods of nipple aspiration wherein fluid yield is increased by applying compression, suction, and heat (0015). In addition, Nguyen teaches applying a warm compress to the breast as well as drugs to facilitate breast fluid removal (0023). At the time of the claimed invention, one of ordinary skill in the art would have been motivated by Hung '7115 and/or Nguyen to apply heat to the breast in the methods of Love with a reasonable expectation for successfully obtaining breast fluid for screening. Although Love does not teach each of the specific modes of compression or disease markers, it would have been well within the purview of one of ordinary skill in the art to optimize such markers and pressure techniques as a matter of routine experimentation.

7. Claims 33, 35 and 40 – 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hung '228 or Love in view of Covington.

Applicant claims a method for screening breast cancer in a patient, the method comprising providing a patient with at least one breast duct having an external opening, directing a stream of carrier fluid under pressure into the opening, directing a carrier fluid under pressure into the opening, removing the carrier fluid through the opening by applying compression, suction and heat to the breast, screening the removed fluid for at least one breast cancer marker. The screening step comprises screening for cytologically abnormal cells, the breast cancer

marker is associated with at least one condition selected from tumorigenesis, tumor growth, neovascularization, and cancer invasion. The method further comprises manipulating the duct to enhance transport of carrier fluid, the compressive force is peristaltic, the fluid is introduced transductally or percutaneously, and the fluid comprises a component for enhancing marker transport. The removing step occurs immediately after carrier introduction, or alternatively after a sufficient indwelling period. The carrier comprises an aqueous solution, and the breast marker is a metabolite, carcinoma cell, dysplastic cell, or is selected from a protein, peptide, glycoprotein, lipid, glycolipid or proteolipid. The removing step is performed by contacting the breast with a device comprising specifically identified attributes in claims 43 – 52.

Hung '228 teaches methods for collecting breast ductal fluid comprising cellular material and markers (disease markers) to identify breast precancer or cancer in patients (abstract). Hung '228 teaches the method wherein a wash fluid (carrier fluid) is introduced into the breast duct for 1 second to 1 hour, followed by removal via massage and aspiration (or suction) (col.11 line 45 – col.13 line 45). The cellular material is then cytologically screened for cell conditions and other disease markers such as proteins, peptides, lipids, glycoproteins metabolites (col.4), chromosomal abnormalities, carcinoma, atypical hyperplasias, and/or growth factors (col. 12 – 15). The carrier fluid may further contain components for enhancing fluid removal (col.12)

Love teaches methods for obtaining cellular material from breast ducts (abstract) for screening, diagnosing and monitoring disease states, cancer and pre cancerous conditions (col.3 line 5-20). Specifically, the method comprises introducing a wash fluid (carrier fluid) into a breast ductal orifice (external opening) for 1 – 5 minutes, collecting (removing) the fluid and

screening the material for proteins, carbohydrates (lipids, peptides) cellular markers, morphological, histochemical and/or immunohistochemical abnormalities to determine the presence of cancer or pre-cancerous conditions (physiological conditions) (col.3-4).

The references do not teach the method wherein fluid is collected by contacting the breast with the claimed device. However, Covington teaches the claimed device for removing breast fluid (claims, col.3-4). At the time of the claimed invention, one of ordinary skill in the art would have been motivated by Covington to practice the methods of Hung '228 or Love with the claimed device as the device is disclosed effective for removing breast ductal fluid. Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to practice the methods of Hung '228 or Love with the device of Covington with a reasonable expectation for successfully obtaining breast duct fluid and screening for breast cancer.

Applicant argues that the references do not teach applying heat to the breast. However, this argument fails to persuade because as indicated above, applying heat was known to facilitate breast ductal fluid aspiration.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth A. Davis whose telephone number is 703-308-6310. The examiner can normally be reached on M-H (7:00-4:30); altn. F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 703-308-0196. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Ruth A. Davis; rad
June 9, 2003

LEON B. LANKFORD, JR.
PRIMARY EXAMINER